

What is claimed is:

1. A heat sink for removing heat from a heat source, said heat sink comprising:

a core member comprising at least one core member first surface, said at least one first surface being adapted to contact at least a portion of said heat source;

at least one outer peripheral surface located on said core member; and

at least one cooling fin operatively connected to said at least one outer peripheral surface, said at least one cooling fin extending in a direction substantially normal to said at least one core member first surface;

at least a portion of said at least one outer peripheral surface being tapered, wherein the circumference of said at least one outer peripheral surface in the proximity of said first surface being greater than the circumference of said at least one outer peripheral surface not in the proximity of said first surface.

2. The heat sink of claim 1, wherein the circumference of said at least one outer peripheral surface is greatest at a junction of said at least one outer peripheral surface and said at least one first surface.

3. The heat sink of claim 1, wherein said at least a portion of said at least one outer peripheral surface being tapered forms a continuous surface.

4. The heat sink of claim 1, wherein said at least one cooling fin provides at least one air channel, and said at least one air channel being adjacent said at least one cooling fin.

5. The heat sink of claim 4, and further comprising at least one second cooling fin, wherein said at least one second cooling fin bisects said

at least one air channel.

6. The heat sink of claim 1, and further comprising a cooling fin device comprising a collar member, wherein said at least one cooling fin is attached to said collar member, said cooling fin device being in thermal contact with said at least one outer peripheral surface.

7. The heat sink of claim 6, wherein an interference fit exists between said at least one outer peripheral surface of said core member and said cooling fin device.

8. The heat sink of claim 1, and further comprising a shroud having at least one inner surface, wherein said at least one inner surface is located adjacent said at least one cooling fin.

9. The heat sink of claim 8, wherein said shroud has a first portion and a second portion, wherein said first portion is located adjacent said at least one cooling fin, and wherein said second portion extends beyond said core member.

10. The heat sink of claim 9, wherein said second portion has at least one slot formed therein.

11. The heat sink of claim 1, wherein said core member comprises a heat pipe.

12. The heat sink of claim 1, wherein said core member further comprises a core member second surface oppositely disposed said at least one first surface, and wherein said heat sink further comprises an air blowing device located in the vicinity of said core member second surface.

13. The heat sink of claim 12, wherein said air blowing device has an air path associated therewith, and wherein said air path is extends in a direction between said at least one core member first surface and said core member second surface.

14. The heat sink of claim 1, wherein said at least one cooling fin has a first end and a second end, wherein both said first end and said second end are adjacent said at least one outer peripheral surface of said core member.

15. The heat sink of claim 1, wherein said at least a portion of said core member and said at least one cooling fin are extruded from a single piece of material.

16. The heat sink of claim 1, wherein said core member comprises a core first portion and a core second portion being in thermal contact, said core first portion comprising the portion of said at least one outer peripheral surface being tapered.

17. The heat sink of claim 16, wherein said core second portion and said at least one cooling fin are formed from a single piece of material.

18. The heat sink of claim 16, wherein said core second portion and said at least one cooling fin are extruded.

19. A heat sink for removing heat from a heat source, said heat sink comprising:

a core member comprising at least one core member first surface and a core member second surface, said at least one first surface being adapted  
5 to contact at least a portion of said heat source, said second surface being oppositely disposed said at least one first surface;

at least one outer peripheral surface located on said core member;

an air blowing device located proximate said core second surface, said air blowing device having an air path associated therewith, said air path extending in a direction between said second surface and said at least one first surface; and

at least one cooling fin operatively connected to said at least one outer peripheral surface, said at least one cooling fin extending in a direction substantially parallel to said air path;

15 at least a portion of said at least one outer peripheral surface being tapered, wherein the circumference of said at least one outer peripheral surface in the proximity of said core member first surface being greater than the circumference of said at least one outer peripheral surface not in the proximity of said core member first surface.

20. A method of manufacturing a heat sink, said method comprising:

providing a first core member comprising a first core member first surface, a first core member second surface oppositely disposed said first core member first surface, and at least one first outer peripheral surface located between said first core member first surface and said first core member second surface;

attaching at least one cooling fin to said at least one outer peripheral surface, said at least one cooling fin extending along an axis, wherein said axis extends between said first core member first surface and said first core member second surface;

providing a second core member comprising a second core member first surface, a second core member second surface, and at least one second outer peripheral surface located between said second core member first surface and said second core member second surface, at least a portion of said at least one second outer peripheral surface being tapered, wherein the circumference of said at least one second outer peripheral surface in the proximity of said second core member first surface is greater than the circumference of said at least one second outer peripheral surface not in the

- 20        proximity of said second core member first surface; and  
            attaching said first core member second surface to said second core member second surface.
21.      The method of claim 20, and further comprising providing an air blowing device located in the vicinity of said first core member first surface.
22.      The method of claim 21, wherein said air blowing device has an air path associated therewith, wherein said at least one cooling fin has a substantially planar surface, and wherein said air path is substantially parallel to said at least one cooling fin surface.
23.      The method of claim 20, wherein said providing a first core member and said attaching at least one cooling fin comprises extruding said first core member and said at least one cooling fin.
24.      The method of claim 20, wherein said attaching said at least one cooling fin comprises pressing said at least one cooling fin onto said first core member.
25.      A method for cooling an object, said method comprising:  
            locating a heat sink adjacent at least a portion of said object, said heat sink comprising:  
                a core member comprising at least one core member first surface, said at least one first surface being adapted be located adjacent said at least a portion of said object;  
                at least one outer peripheral surface located on said core member; and  
                at least one cooling fin operatively connected to said at least one outer peripheral surface, said at least one cooling fin extending in a direction substantially normal to said at least one core member first surface;

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at least a portion of said at least one outer peripheral surface being tapered, wherein the circumference of said at least one outer peripheral surface in the proximity of said first surface being greater than the circumference of said at least one outer peripheral surface not in the proximity of said first surface;

forcing air past said at least one cooling fin.

26. The method of claim 25, wherein said core member comprises a second surface located opposite said at least one first surface, said forcing air comprises forcing air past said at least one cooling fin in a direction from said second surface toward said at least one first surface.

27. The method of claim 25, wherein said forcing air comprises locating an air blowing device proximate said at least one first surface and using said air blowing device to force air past said at least one cooling fin.

28. The method of claim 27, wherein said air blowing device is a fan.

29. The method of claim 25, wherein said heat sink further comprises a shroud having at least one inner surface, wherein said at least one inner surface is located adjacent said at least one cooling fin.